

REMARKS

Claims 1-17 have been cancelled without prejudice or disclaimer. New claims 35-37 have been added and claims 18, 23, 24, 26, and 27-34 have been amended. Claims 18-37 are currently pending. Reconsideration of the pending claims in view of the foregoing amendments and following remarks is respectfully requested.

The undersigned thanks the Examiner for the courtesies extended during an interview on November 28, 2006 in which claims 18 and 27 were discussed. No agreement was reached as to the discussed claims. The Examiner stated during the interview that the amendment to claim 18 presents issues of 35 U.S.C. § 112, first and second paragraph absent any recitation of numerical values for an upper and lower range listing for claim 18. Applicant respectfully disagrees that a numerical range needs to be provided in order to prevent issues surrounding section 112. To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. See MPEP § 2163. Clearly one skilled in the art would conclude that the inventor had possession of the claimed invention. Further no new matter has been added as a result of the current amendment to claim 18. In particular, support can be found for amended claim 18 in the specification as follows:

1. "The linear speed and the rotational speed may be continuously variable and are controlled to maintain a constant ratio of linear conveyor speed to rotational brush speed in one embodiment." Page 2, Lines 19-21;
2. "In an alternate embodiment of the invention, if the speed of the conveyor falls below a threshold value, the brush roll speed is maintained at a minimum speed regardless of conveyor speed. As an illustration, it has been found that for certain brushes if brush

speed drops below a threshold, cleaning efficiency suffers. In this embodiment, if the conveyor speed falls below 10 feet per minute, the brush speed is maintained at 300 rmp *sic*. Above that conveyor speed, a linear relation between brush and conveyor speed is maintained until a maximum of 30 feet per minute and 644 rpm is achieved.” Page 2, Lines 27-31 – Page 3, Lines 1-3;

3. “However, it should be noted that the ratio of magnitude of the reference signal 122 provided to the variable speed conveyor motor drive 101 to the reference signal 124 provided to the variable speed brush drive 103 need not be 2:1, *but can be any ratio that provides the desired ratio of linear speed of the conveyor to brush speed to accommodate different types of glass plates, low-e coatings, conveyor, motors, brushes, rollers, cleaning liquid and cleaning tolerances being used.*” Page 7, Lines 9-15; (emphasis added) and
4. “It has been found that for certain brushes if brush speed drops below a threshold, cleaning efficiency suffers. Therefore in an alternate embodiment, if the conveyor speed falls below 10 feet per minute, the brush speed is maintained at 300 rmp *sic*. Above that conveyor speed, a linear relation between brush and conveyor speed is maintained until a maximum of 30 feet per minute and 644 rpm is achieved.” Page 7, Lines 16-20.

Accordingly, any rejection of claim 18 under 35 U.S.C. §112 as currently amended would be respectfully inappropriate.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112

The Office Action stated that claims 23-34 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action stated that claim 23 was indefinite because “said conveyor” lacked a positive antecedent basis. Claim 23 has been amended to correct such deficiency and is now believed to be definite and removal of the 112 rejection is respectfully requested.

The Office Action stated that claim 24 was indefinite because the structural

relationship between the conveyor drive motor and the brush drive motor was unclear. Claim 24 features the method of washing glass sheets of claim 18, wherein the linear speed is controlled by controlling a voltage applied to a conveyor drive motor and the rotational speed is controlled by controlling a voltage applied to a brush drive motor. The drive motors of claim 24 implement the speed control featured in claim 18. Applicant's representative believes such relationship is clear and that claim 24 is definite as filed, and notice to that effect is respectfully requested. The Office Action stated that claims 25, 28-30, and 32-34 were indefinite because of their dependency to claim 24. It is believed in view of the remarks above, that claim 24 is definite and that claim 25, 28-30, and 32-34 are definite as a result, and notice to that effect is respectfully requested.

The Office Action stated that claim 26 was indefinite because it was unclear what applicant is trying to claim since the claim recites a rotational speed fixed less than a threshold, that the rotational speed is varied equal to, or greater than the threshold, and that it was unclear what the threshold value represents. Further, the Office Action stated that "the conveyor" lacked a positive antecedent basis. Claim 26 has been amended and features the method of claim 18 further comprising controlling the rotational speed by controlling a conveyor and the threshold being established by a prescribed value relating to the linear speed, wherein the rotational speed of the brush is fixed for linear speeds of the conveyor less than the threshold and the rotational speed varies over a range for linear speeds of the conveyor equal to or greater than said threshold. Applicant's representative believes that the amendment to claim 26 as stated above addresses each of the issues with

respect to claim 26, and that the claim is now definite and a notice to that effect is respectfully requested.

The Office Action stated that claim 27 was indefinite because it was unclear what the structural relationship is between the user input device and the conveyor. Part (a) of claim 27 recites the movement of a glass sheet is at a controlled linear speed by use of a conveyor. By adjusting a user input device as recited in part (c) the linear speed of the glass by the conveyor as recited in part (a) is controlled. Applicant's representative believes in view of the explanation and amendment to claim 27 that the claim is definite and notice to that effect is respectfully requested.

The Office Action stated that claim 31 was indefinite because "the conveyor" lacked a positive antecedent basis. Claim 31 has been amended to depend from claim 27, providing a positive antecedent basis for the conveyor. Amended claim 31 is now believed to be definite and notice to that effect is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

The Office Action stated that claims 18-34 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 3,566,429 issued to Hamilton *et al.* (hereinafter "Hamilton"). The M.P.E.P. sets forth the criteria for a rejection for obviousness as follows:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

See, MPEP § 706.02(j) *citing In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Hamilton fails to satisfy the above *prima facie* case of obviousness criteria and as such, the rejection is respectfully traversed.

Amended claim 18 features a method for washing glass sheets comprising moving a glass sheet along a path of travel at a controlled linear speed. The method further includes contacting the glass sheet with a brush rotatable at a controlled rotational speed positioned along the path of travel wherein the linear speed and the rotational speed are variable and one of the linear speed and the rotational speed is dependent on any other of the linear speed and the rotational speed when the linear speed is operating above a threshold and the linear speed and rotational speed are independent of each other when the linear speed is operating below the threshold.

Nowhere does Hamilton teach or suggest a linear speed and rotational speed having a threshold. Even more lacking is any teaching or suggestion where the linear and rotational speed dependency is a function of the linear speed's operating level with respect to a threshold. Instead, Hamilton teaches a pair of feed rollers (232, 233),

discharge rollers (240, 241), and upper and lower cylindrical drive brushes (66-83; 106-123) that are controlled from a single motor (350) mechanically connected with a chain (360). The linear speed of the rollers and rotational speed of the brushes are always the same and constant with respect to each other, regardless of the linear speed of the rollers based on their mechanical connection to a single chain driven motor (350). When the speed of the rollers (232, 233) increases the brushes will according increase the same amount. Hamilton further teaches a single motor (430) for mechanically controlling the rotation of upper and lower skimming brushes (182-188; 202-208) so that the rotation of the skimming brushes is regulated to maintain a speed 5 to 10 times the rate of the upper and lower drive brushes (66-83; 106-123). There is no suggestion of a threshold in which the skimming brushes will operate independently of any linear speed. Accordingly, amended claim 18 is in condition for allowance and notice to that effect is respectfully requested.

Claim 21 features the method of washing glass sheets of claim 18 wherein the linear speed is continuously variable over a range of linear speeds and the rotational speed is continuously variable over a range of rotational speeds. The Office Action failed to provide any reasoning for rejecting claim 21. Accordingly, and for the reasons stated above with respect to claim 18 from which it depends, claim 21 is in condition for allowance. A notice that claim 21 is allowed is respectfully requested.

Claim 25 features a method of washing glass sheets of claim 24 which in turn depends on allowable claim 18, wherein the voltage applied to the brush drive motor featured in claim 24 is dependent on the voltage applied to the conveyor drive motor.

Nowhere can Applicant's representative find in Hamilton any teaching or suggestion that the voltage applied to a brush drive motor is dependent on the voltage applied to a conveyor drive motor. A single motor (360) in Hamilton drives both feed and discharge rollers (232, 233), (240, 241), and upper and lower cylindrical drive brushes (66-83; 106-123) and lacks the need or the ability to independently vary the speeds of the brushes and rollers because of their mechanical connection. Nowhere can Applicant's representative find any teaching or suggestion in Hamilton that the voltage applied to the motor (430) is dependent on the voltage applied to the single motor (360). For the reasons stated above with respect to claim 25 and the reasons stated with respect to claim 18 from which claim 25 indirectly depends, claim 25 is in condition for allowance and notice to that effect is respectfully requested.

As previously stated, claim 26 features the method of claim 18 further comprising controlling the rotational speed by controlling a conveyor and the threshold being established by a prescribed value relating to the linear speed. The rotational speed of the brush is fixed for linear speeds of the conveyor less than the threshold and the rotational speed varies over a range for linear speeds of the conveyor equal to or greater than the threshold. Absent is any teaching or suggestion in Hamilton of a threshold that is a function of linear speed such that the threshold controls whether the rotational speed is constant or varies over a range with the linear speed. As discussed above, the drive brushes operated by the single motor (350) are mechanically connected with the rollers, incapable of varying independently from the roller speed. The second motor (430) is regulated to operate 5 to 10 times the rate of the single motor (350), completely void of

any threshold or discussion regarding operating independently from the roller speed. Any variation in the brush speed of Hamilton would constitute a negative teaching, thus teaching away from the regulated and faster speed of the skimming brushes necessary for the “cleaning forces...[to be] applied to the object in a direction substantially tangential to the flat surface of the object.” Col. 2, Lines 45-51. Accordingly, claim 26 is in condition for allowance for the reasons stated above and for the reasons stated with respect to claim 18 from which claim 26 depends. Notice that claim 26 is in condition for allowance is respectfully requested.

Claim 27 features a method for washing glass sheets comprising moving a glass sheet with a conveyor along a path of travel at a controlled linear speed and contacting the glass sheet with a plurality of brushes rotatable at a controlled rotational speed as the glass sheet moves along the path of travel. The method further comprises adjusting the controlled linear speed of the conveyor by adjusting a user input device wherein the rotational speed is dependent on the linear speed.

Hamilton fails to teach or suggest the adjusting of the controlled linear speed of glass by adjusting the controlled linear speed of the conveyor. Instead, Hamilton teaches that the speed of the glass moving through the cleaning apparatus is controlled by both the linear speed of the rollers and the rotational speed of the brushes. For example, Hamilton recites “[i]f the object has not attained the optimum speed after passing over roller (233), it is quickly accelerated thereto as it passes between skimming brushes (182) and (202)” and by way of yet another example Hamilton teaches that “each of the upper and lower cylindrical skimming brushes is driven in a direction tending to aid the motion

of the object 500 along path 510” Col. 8, Lines 58-60; Col. 9, lines 27-29 (respectively). Accordingly, claim 27 is in condition for allowance and notice to that effect is respectfully requested.

Claim 33 features a method of washing glass sheets, wherein the voltage applied to the brush drive motor is dependent on the voltage applied to the conveyor drive motor.

As previously stated, nowhere can Applicant’s representative find in Hamilton any teaching or suggestion that the voltage applied to a brush drive motor is dependent on the voltage applied to a conveyor drive motor. For the reasons stated above with respect to claim 33 and the reasons stated with respect to claim 27 from which claim 33 indirectly depends, claim 33 is in condition for allowance and notice to that effect is respectfully requested.

New claims 35-37 have been added and are patentable over Hamilton for the reasons discussed herein and because of their own distinctive features. Further, Applicant’s representative included the range limitations suggested by the Examiner during the November 26th interview in new claim 36 and is therefore allowable. For all the above reasons, a notice allowing new claims 35-37 is respectfully requested.

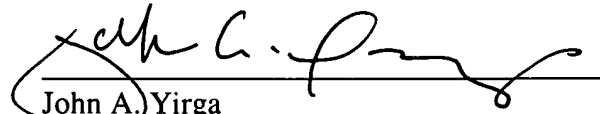
CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the claims in this Application are patentably distinct from the cited reference and are in condition for allowance. Prompt notice to that effect is respectfully requested. If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies,

to charge payment or credit any overpayment to Deposit Account No. 20-0090 for additional fees required under 37 C.F.R. §§ 1.16, 1.17; particularly extension of time fees.

Respectfully submitted,

Date: 12/6/06


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